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12.3.129.1 v2  
01107/09

## ATTACHMENT 15

American Civil Constructors West Coast, Inc.  
Response to Supplemental 104(e) Request (January 29, 2010)  
Lower Duwamish Waterway Superfund Site



## Interim Stockpile Sampling Report

Point Ruston Concrete Recycling Project  
Ruston, Washington

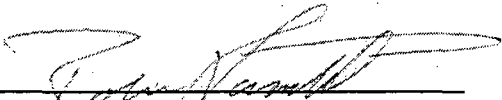
January 7, 2009

Prepared For:

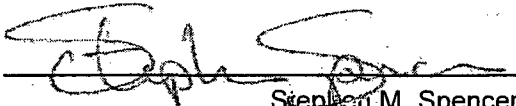
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**Environmental Management Services, LLC**  
*providing practical environmental compliance solutions*

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December 17<sup>th</sup> Sampling  
December 22<sup>nd</sup> Sampling  
December 23<sup>rd</sup> Sampling

DRAFT

## Introduction

Environmental Management Services (EMS) has prepared this Interim Stockpile Sampling Report at the request of Nuprecon LP (Nuprecon) following the sampling of processed recycled concrete located at Point Ruston, Washington.

This report will discuss sampling activities, methodology and findings related to the collection and chemical analysis of concrete samples collected on three separate sampling events during December 2008 sampling requirements were stipulated in the Nuprecon memorandum of understanding (MOU) between Point Ruston LLC (property owner) and Nuprecon LLP (contractor). Sample requirements include the collection and chemical analysis of one (1) four way composite sample of "post crushed" concrete from every 2,500 cubic yards of processed concrete material. Chemical analysis was to include total petroleum hydrocarbons, total metals lead and arsenic and poly chlorinated byphenols (PCBs).

## Site History

The land is the former site of a smelting facility operated by Asarco from 1912 to 1985. An agreement was entered into between the United States Environmental Protection Agency (EPA), Asarco and Point Ruston LLC. The agreement allowed Asarco to sell the Asarco Smelter property, which is part of the Commencement Bay Nearshore/Tideflats Superfund Site, to Lacey, Washington based developer Point Ruston LLC (Point Ruston). Point Ruston intends to undertake residential and commercial development on the purchased property.

## Processing Operations

EMS understands that the processing operation includes the barge import of concrete debris from the pier bravo project (P-356 CVN Maintenance Pier Replacement) Bremerton Naval Shipyard. Each barge load contains approximately 2000 cubic yards of concrete debris. The barge takes approximately 4 to 6 hour to reach the offload site at Point Ruston following loading at the source location. The barge is unloaded once arriving at the Point Ruston processing facility by Nuprecon. The concrete is stockpiled near the crushing equipment and all accessible rebar cut away prior to crushing. Crushing is accomplished by loading the large concrete debris into a Komatsu 580G crusher followed by stockpiling crushed material in 500 yards stockpiles.

## Sampling & Analytical Activities

The sampling and analysis plan (SAP) completed by EMS was based on the MOU between Nuprecon and Point Ruston LLC. The SAP provided specific allowable limits for total petroleum hydrocarbons, total metals arsenic and lead and PCBs. These allowable limits were prescribed in the MOU.

### Allowable limits:

Total Petroleum Hydrocarbons	200 mg/kg
Total Metals – Arsenic	20 mg/kg
Total Metals – Lead	250 mg/kg
Polychlorinated Byphenols	1 mg/kg

### December 17, 2008 Sampling Event

Following the processing of approximately 1500 cubic yards of concrete, EMS Sr. Geologist, Robin Hamlet and Principal, Stephen Spencer completed a site reconnaissance of the Point Ruston concrete processing area. One stockpile, totaling approximately 500 cubic yards was presented to EMS as the most recent stockpile following concrete processing activities. Mr. Joe Fuchs, Nuprecon Site Superintendent, provided site specific information as to the concrete staging, processing and stockpile operations prior to EMS sampling activities.

During this site visit, samples were collected from five random locations around the perimeter of the stockpile approximately 6 to 10 inches below the surface of the stockpile. Sample material consisted of a mix of concrete dust and small concrete granules up to 1 to 2 inch concrete rubble, and 1 inch angular gravel aggregate. Sample material was collected using properly decontaminated stainless steel sampling trawl and disposable Nitrile gloves. Sample material was placed into discrete sample collection jars and assigned unique sample identification numbers. Following collection, the samples were transported to Fremont Analytical under industry standard chain of custody for chemical analysis.

Each discrete sample was consolidated by the laboratory and analyzed as one composite sample designated S1-S5-Composite. Sample analysis included total arsenic & lead by method EPA Method 6020, total petroleum hydrocarbons by Method NWTPH-HCID, and PCBs by EPA Method 8082 (Attachment A).

Sample results reported PCBs non-detect (ND) or below the laboratories method reporting limit (MDL) and total petroleum hydrocarbons below their respective MDL. Total lead was reported at 25 milligrams per kilogram (mg/kg) and total arsenic at 40 mg/kg. Arsenic was the only analyte reported exceeding their respective maximum allowable concentration.

#### **December 19, 2008 Sampling Event**

Due to the elevated levels of arsenic reported in the December 17, 2008 sampling event, Nuprecon directed EMS to collect additional samples of post processed concrete. EMS Sr, Environmental Geologist Robin Hamlet collected four discrete samples from four random locations around the perimeter of the stockpile approximately 6 to 10 inches below the surface of the stockpile. As with the previous sampling event, sample material consisted of a mix of 1-inch minus concrete and angular gravel aggregate. Sample material was collected using properly a decontaminated stainless steel sampling trawl and disposable Nitrile gloves. Sample material was placed into discrete sample collection jars and assigned unique sample identification numbers. The samples were transported to Fremont Analytical under industry standard chain of custody for chemical analysis.

Each discrete sample S2, S2A, S2B and S2C was consolidated by the laboratory and analyzed as one composite sample designated S2-Composite. This sample was analyzed for total arsenic by EPA Method 6020 only (Attachment A). Sample results reported total arsenic at 50 mg/kg. Sample results are presented in Attachment A.

#### **December 23, 2008 Sampling Event**

Based on the sample results from both the December 17 and 19, 2008 sampling events, further investigation as to the nature of the arsenic was warranted. EMS was authorized by Nuprecon to further investigate the concrete; both staged on the site prior to processing and the post processing stockpiled material.

On December 23, 2008, EMS completed a site reconnaissance with the assistance of Joe Fuchs, Nuprecon Site Superintendent. EMS was shown three areas, a pre-processing concrete staging area, the concrete processing area and the post processing stockpile area.

### **Pre-Processing Sample Collection**

Pre-processed concrete samples were collected by two different methods. The first method was to collect one four-way composite sample of small concrete debris within the staging stockpile. The second method was the collection of bulk mass concrete for offsite crushing and analysis in a controlled environment.

Unlike the previous sampling events, the four-way sample was composited in the field by placing equal amount of material, approximately four ounces from each of the four locations, in a one gallon sample collection bag. Once homogenized, a four ounce sample (C2-Pre-122308) was collected from the material using a stainless steel sampling spoon and Nitril gloves. The sample material was placed in to a laboratory provided four ounce sample jar.

Two separate bulk mass samples were collected. One consisted on a light colored concrete referred to as Decking, sample identification S6-Decking. The second sample was of a darker gray to black concrete referred to as piling, sample identification S5-Piling. Per Nuprecon, the "Decking" originated from Pier Bravo Deck and the darker "Piling" concrete originated from Pier Bravo pilings.

Each of the bulk mass samples were placed into individual one gallon plastic bags and transported to the EMS office. The bulk material was crushed on a properly decontaminated stainless steel plate using a properly decontaminated stainless steel rock hammer. The crushed material was returned to one gallon plastic bag then four ounces collected and placed into discrete four ounce sample collection jars.

### **Post-Processing Sample Collection**

Four discrete samples from four random locations around the perimeter of the post-processing stockpile were collected approximately 6 to 10 inches below the surface of the stockpile. The four-way sample was composited in the field by placing equal amount of material, approximately four ounces from each of the four locations, in a one gallon sample collection bag. Once homogenized, a four ounce sample C1-Post-122308 was collected from the material using a stainless steel sampling spoon and Nitril gloves. The sample material was placed into a laboratory provided four ounce sample jar.

Following sample collection of both the pre and post processing materials, the samples were transported to Fremont Analytical (Fremont) under industry standard chain of custody for

chemical analysis. Pre and Post composite split samples were collected and submitted to Friedman and Bruya, Inc. (F&BI) for additional duplicate analysis.

Sample results for the pre-composite sample were reported by Fremont at 43 mg/kg and F&BI at 12.5 mg/kg. Sample results for the post-composite sample were reported by Fremont at 20 mg/kg and F&BI at 40.1 mg/kg.

Sample results for the bulk material crushed by EMS reported sample S5-Piling containing arsenic at 5.9 mg/kg and sample S6-Decking containing arsenic at 55 mg/kg.

### Findings and Opinion

Due to the Point Ruston Site history extreme caution was taken to eliminate the possibility of cross contamination during the sampling process. EMS was onsite on three different dates to collect composite samples from three individual stockpiles. Each composite sample consisted of four or five discrete samples for a total of three composite samples of post-crushed concrete. Each sample was reported at or exceeding the maximum allowable limit of 20 mg/kg total arsenic. Sample results from material designated "decking", sample S5 was reported at 55 mg/kg exceeding the 20 mg/kg total arsenic.

At the request of Nuprecon, additional analysis of the most recent composite samples, C1-Post and C2-Pre, are being analyzed using Flame Atomic Absorption (FAA). Sample results were not available during the completion of this interim report, however results are anticipated to be consistent with previous analytical findings.

Based on sample results, it appears that the concrete imported to the site for processing is contaminated with arsenic at concentrations exceeding the 20 mg/kg allowable limit. Further assessment of stockpiled pre-processed concrete, post-processed concrete as well as concrete with remains in place at the Bremerton site is warranted.



# Attachment A

## Analytical Tables

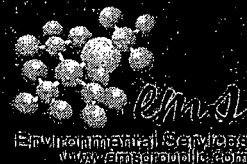
Table 1 - Total Metals Arsenic & Lead

Table 2 - Total Petroleum Hydrocarbons

Table 3 - Polychlorinated Biphenyls

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Attachment A  
Analytical Tables





**Table 1 - Total Petroleum Hydrocarbons - HCID Scan  
Point Ruston Concrete Recycling Project  
Point Ruston, Washington**

Client: Nuprecon LP

Sample Number	Sample Location	Sample Depth	Sample Date	Field Screening Results		Total Petyroleum Hydrocarbons - Method NWTPH-HCID					
		Headspace		Sheen Test	Gasoline	Mineral Spirts	Kerosene	Diesel	Mineral Oil	Heavy Oil	
		feet bgs		ppm	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
S1-S5 Composit	Stockpile 01	NA	12/17/2008	0 ppm	None	<20	<30	<50	<50	<100	<100
Laboratory Detection or Practical Quantitation Limit Soil						20.0	30.0	50.0	50.0	100.0	100.0
Model Toxic Control Act (MTCA) Method A Cleanup Levels For Soil						100/30	100/30	2000	2000	4000	2000

**BOLD/RED** = Analyte above MTCA 2001 Method A Cleanup levels.

Values are reported in milligrams per kilograms (mg/kg).

< # (ND) = analyte not detected above the analytical method detection limit cited.

Diesel / Mineral Oil / Oil analytical method NWTPH-Dx

Diesel range petroleum hydrocarbon Method A Cleanup Levels for soil are 2000 mg/kg unless Diesel & Oil 4000 mg/kg Mineral Oil

Gasoline range petroleum hydrocarbon Method A Cleanup Levels for soil are 100 mg/kg unless Benzene is present then 30 mg/kg cleanup levels

MTCA 2001 Method A Cleanup Levels for Soil from the Model Toxics Control Act (MTCA) Amendment Table 740-1 WAC 173-340 -900 Tables.

bgs=below ground surface

NA=Not Applicable



**Table 1 - Arsenic & Lead Metals Analysis  
Point Ruston Concrete Recycling Project  
Point Ruston, Washington**

Cleint: Nuprecon LP

January 6, 2008

Sample Number	Sample Location	Laboratory	Sample Depth	Sample Date	EPA Method 6020	
					Pb - Total Lead	As - Total Arsenic
					mg/kg	mg/kg
S1-S5-Composit	Concrete Stockpile	Fremont Analytical	NA	12/17/2008	25	<b><u>40.0</u></b>
S1-S5-Composit (D)	Concrete Stockpile	Fremont Analytical	NA	12/17/2008	16	<b><u>26.0</u></b>
S2-S2C-Compopsit	Concrete Stockpile	Fremont Analytical	NA	12/19/2008	NA	<b><u>50.0</u></b>
S2-S2C-Compopsit (D)	Concrete Stockpile	Fremont Analytical	NA	12/19/2008	NA	<b><u>47.0</u></b>
S5-Decking	Concrete Stockpile	Fremont Analytical	NA	12/23/2008	NA	<b><u>55.0</u></b>
S6-Piling	Concrete Stockpile	Fremont Analytical	NA	12/23/2008	NA	5.9
C1-Post	Concrete Stockpile	Fremont Analytical	NA	12/23/2008	NA	<b><u>20.0</u></b>
C2-Pre	Concrete Stockpile	Fremont Analytical	NA	12/23/2008	NA	<b><u>43.0</u></b>
S5-Decking (D)	Concrete Stockpile	Fremont Analytical	NA	12/23/2008	NA	<b><u>46.0</u></b>
D-C1-Post	Concrete Stockpile	Freidmon & Bruya	NA	12/23/2008	NA	<b><u>40.1</u></b>
D-C2-Pre	Concrete Stockpile	Freidmon & Bruya	NA	12/23/2008	NA	12.5
Laboratory Detection or Practical Quantitation Limit Soil					1	0.1
Model Toxic Control Act (MTCA) Method A Cleanup Levels For Soil					250	20

**BOLD/Underlined** = Analyte above MTCA 2001 Method A Cleanup levels.

Values are reported in milligrams per kilograms (mg/kg).

< # (ND) = analyte not detected above the analytical method detection limit cited.

MTCA 2001 Method A Cleanup Levels for Unrestricted Residential Land Use - (MTCA) WAC 173-340-900 Tables.

bgs=below ground surface

NA=Not Applicable

D=Laboratory Duplicate



**Table 3 - Polychlorinated Biphenyls Analysis**  
**Point Ruston Concrete Recycling Project**  
**Point Ruston, Washington**

Client: Nuprecon LP

January 6, 2008

Sample Number	Sample Location	Sample Depth	Sample Date	Polychlorinated biphenyls (PCBs) Method 8082								
				Aroclor 1221	Aroclor 1232	Aroclor 1016	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Total Aroclors
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
S1-S4-Composit	Concrete Stockpile	NA	12/17/2008	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
Method Reporting or Practical Quantitation Limit - Soil				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-
Model Toxic Control Act (MTCA) Method A Cleanup Levels - Soil				<1 mg/kg total Aroclors								

**BOLD/RED** = Analyte above MTCA 2001 Method A Cleanup levels.

**D** = Detect exceeding HCID detection levels

Values are reported in milligrams per kilograms (mg/kg).

< # (ND) = analyte not detected above the analytical method detection limit cited.

Diesel / Mineral Oil / Oil analytical method NWTPH-Dx

Diesel range petroleum hydrocarbon Method A Cleanup Levels for soil are 2000 mg/kg unless Diesel & Oil 4000 mg/kg Mineral Oil

Gasoline range petroleum hydrocarbon Method A Cleanup Levels for soil are 100 mg/kg unless Benzene is present then 30 mg/kg cleanup levels

MTCA 2001 Method A Cleanup Levels for Soil from the Model Toxic Control Act (MTCA) amendment Table 740-1 WAC 173-340 -900 Tables.

bgs=below ground surface

NA=Not Applicable

# Attachment B

Project Analytical Results

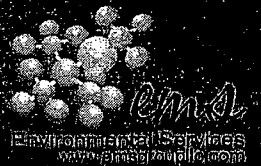
December 17th Sampling

December 22nd Sampling

December 23rd Sampling

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Attachment B  
Analytical Results





# Fremont

Analytical

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Environmental Management Services, LLC  
Attn: Kaitlyn Allegretti  
PO Box 153  
652 8th Ave.  
Fox Island, WA 98333

RE: Nuprecon - Point Ruston Concrete SP  
Fremont Project-No: CHM081217-1

December 18th, 2008

Kaitlyn:

Enclosed are the analytical results for the **Nuprecon - Point Ruston Concrete SP** soil samples delivered to Fremont Analytical on December 15th, 2008.

The samples were received in good condition - properly sealed, labeled and within holding time. The samples were contained in 4oz soil jars. The samples were composited, extracted, analyzed and stored in a refrigeration unit at the USEPA-recommended temperature of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

Examination of these samples was conducted for the presence of the following:

- **Diesel and Heavy Oil in Soil by NWTPH-Dx / Dx Ext (Composite)**
- **Total Metals (Pb, As) in Soil by EPA Method 6020 (Composite)**

This application was performed under Washington State Department of Ecology accreditation parameters. All appropriate Quality Assurance / Quality Control method parameters have been applied.

**Notations – EPA Method 6020:** The relative % difference between the sample and sample duplicate exceeded laboratory limits. The laboratory control sample (LCS), Matrix Spike (MS) and MS Duplicate were within range demonstrating that the analysis was control. The variance is due to the sample composite.

Please contact the laboratory if you should have any questions about the report.

Thank you for using Fremont Analytical!

Sincerely,

Michael Dee  
Sr. Chemist / Principal

mikedee@fremontanalytical.com

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## Hydrocarbon Identification in Solids by NWTPH-HCID

Project: Nuprecon - Point Ruston Concrete SP

Client: EMS

Client Project #: N/A

Lab Project #: CHM081217-1

NWTPH-HCID (mg/kg)	MRL	Method	RL	Composite					Duplicate
				Blank	S1-121708	S2-121708	S3-121708	S4-121708	S5-121708
Date Extracted		12/17/08					12/17/08		12/17/08
Date Analyzed		12/17/08					12/17/08		12/17/08
Matrix							Solid		Solid
Gasoline	20	nd	100				nd		nd
Mineral Spirits	30	nd	150				nd		nd
Kerosene	50	nd	250				nd		nd
Diesel (Fuel Oil)	50	nd	250				nd		nd
Mineral Oil	100	nd	500				nd		nd
Heavy Oil	100	nd	500				nd		nd
<b>Surrogate Recovery</b>									
(Surr 1) 2-Fluorobiphenyl		80%					102%		95%
(Surr 2) o-Terphenol		81%					100%		99%
<b>Legend:</b>									
"nd" Indicates not detected at listed reporting limits									
"int" Indicates that interference prevents determination									
"D" Indicates detection at or above the listed reporting limit									
"C" Indicates coelution prevents determination									
"MRL" Indicates Method Reporting Limit									
"RL" Indicates Reporting Limit									

**Acceptable Recovery Limits:**

Surrogate = 65% to 135%



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## Analysis of Total Metals in Solids by EPA Method 6020

Project: Nuprecon - Point Ruston Concrete SP

Client: EMS

Client Project #: N/A

Lab Project #: CHM081217-1

EPA 6020 (mg/kg)	MRL	Method Blank	LCS	RL	Composite				
					S1-121708	S2-121708	S3-121708	S4-121708	S5-121708
Date Extracted		12/17/08	12/17/08				12/17/08		
Date Analyzed		12/18/08	12/18/08				12/18/08		
Matrix							Solid		
Arsenic (As)	1.0	nd	109%	5.0			40		
Lead (Pb)	1.0	nd	100%	5.0			25		

"nd" Indicates no detection at the listed reporting limits

"int" Indicates that interference prevents determination

"J" Indicates estimated value

"MRL" Indicates Method Reporting Limit

"RL" Indicates Reporting Limit

"LCS" Indicates Laboratory Control Sample

"MS" Indicates Matrix Spike

"MSD" Indicates Matrix Spike Duplicate

"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%

Acceptable Recovery Limits:

LCS, LCSD, MS, MSD: 65% to 135%

Spike Concentration:

As = 60 mg/kg

Pb = 30 mg/kg

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## Analysis of Total Metals in Solids by EPA Method 6020

Project: Nuprecon - Point Ruston Cr

Client: EMS

Client Project #: N/A

Lab Project #: CHM081217-1

EPA 6020 (mg/kg)	Duplicate		MS		MSD	
	MRL	RL	Composite	RPD	Composite	Composite RPD
Date Extracted			12/17/08	%	12/17/08	12/17/08 %
Date Analyzed			12/18/08		12/18/08	12/18/08
Matrix			Solid		Solid	Solid
Arsenic (As)	1.0	5.0	26	42%	104%	109% 5%
Lead (Pb)	1.0	5.0	16	44%	65%	70% 7%

"nd" Indicates no detection at the listed reporting limits

"int" Indicates that interference prevents determination

"J" Indicates estimated value

"MRL" Indicates Method Reporting Limit

"RL" Indicates Reporting Limit

"LCS" Indicates Laboratory Control Sample

"MS" Indicates Matrix Spike

"MSD" Indicates Matrix Spike Duplicate

"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%

Acceptable Recovery Limits:

LCS, LCSD, MS, MSD: 65% to 135%

Spike Concentration:

As = 60 mg/kg

Pb = 30 mg/kg

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## Analysis of PCB's (Polychlorinated Biphenyls) by EPA 8082

Project: Nuprecon - Point Ruston Concrete SP

Client: EMS

Client Project #: N/A

Lab Project #: CHM081218-1

EPA 8082 (mg/kg)	MRL	Method Blank	LCS	RL	Composite			
					S1-121708	S2-121708	S3-121708	S4-121708
Date Extracted		12/18/08	12/18/08				12/18/08	
Date Analyzed		12/18/08	12/18/08				12/18/08	
Matrix							Solid	
Aroclor 1016	0.5	nd		2.0			nd	
Aroclor 1221	0.5	nd		2.0			nd	
Aroclor 1232	0.5	nd		2.0			nd	
Aroclor 1242	0.5	nd		2.0			nd	
Aroclor 1248	0.5	nd	94%	2.0			nd	
Aroclor 1254	0.5	nd		2.0			nd	
Aroclor 1260	0.5	nd		2.0			nd	

### Surrogate Recovery

Surr 1 (TCMX)	92%	104%	117%
Surr 2 (DCBP)	100%	109%	int

"nd" Indicates no detection at the listed reporting limits

"int" Indicates that interference prevents determination

"C" Indicates coelution with Sample Peaks

"J" Indicates estimated value

"MRL" Indicates Method Reporting Limit

"LCS" Indicates Laboratory Control Sample

"MS" Indicates Matrix Spike

"MSD" Indicates Matrix Spike Duplicate

"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%

### Acceptable Recovery Limits:

Surrogates = 65% to 135%

LCS, LCSD, MS, MSD = 65% to 135%

Surrogates Concentration = 25 µg/L

Spike Concentration = 1.0 mg/kg

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## Analysis of PCB's (Polychlorinated Biphenyls) by EPA 8082

Project: Nuprecon - Point Ruston Cr

Client: EMS

Client Project #: N/A

Lab Project #: CHM081218-1

EPA 8082 (mg/kg)	Duplicate			MS		MSD	
	MRL	RL	Composite	RPD	Composite	Composite	RPD
Date Extracted			12/18/08	%	12/18/08	12/18/08	%
Date Analyzed			12/18/08		12/18/08	12/18/08	
Matrix			Solid		Solid	Solid	
Aroclor 1016	0.5	2.0	nd				
Aroclor 1221	0.5	2.0	nd				
Aroclor 1232	0.5	2.0	nd				
Aroclor 1242	0.5	2.0	nd				
Aroclor 1248	0.5	2.0	nd		72%	76%	8%
Aroclor 1254	0.5	2.0	nd				
Aroclor 1260	0.5	2.0	nd				

### Surrogate Recovery

Surr 1 (TCMX)	123%	118%	112%
Surr 2 (DCBP)	int	107%	109%

"nd" Indicates no detection at the listed reporting limits

"int" Indicates that interference prevents determination

"C" Indicates coelution with Sample Peaks

"J" Indicates estimated value

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"LCS" Indicates Laboratory Control Sample

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"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%

#### Acceptable Recovery Limits:

Surrogates = 65% to 135%

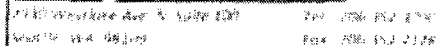
LCS, LCSD, MS, MSD = 65% to 135%

Surrogates Concentration = 25 µg/L

Spike Concentration = 1.0 mg/kg

CONFIDENTIAL

[www.fremontanalytical.com](http://www.fremontanalytical.com)



DATE: \_\_\_\_\_

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

Project Name: Reproduction of A. trilineatus (Colorado SP)  
Location: South Platte river  
Collected by: William J. ...

Report to (DIA): *6/14/95* *15* *Spencer* *Box* *292* *369* *6728* Email: *K. J. H. Spencer* *15* *Spencer* *Box* *292* *369* *6728* Project No: *15* *Spencer* *Box* *292* *369* *6728*

Sample Name	Date	Sample Type	Notes
S1 - 12/17/08	12/17	10.15	
S2 -	10.16		
S3 -	10.16		
S4 -	10.16		
S5 -	10.16		

LABORATORY

⊗

⊗

⊗

⊗ Add Analysis  
12/18/08  
UR

PCB - COMPOSITE  
SAMPLE (1-4)

HClO - COMPOSITE  
SAMPLES (1-4)

Lab: [Signature]  
Date: 12/17/08 12:00  
Ref: [Signature]

12/17/08 12:00

Sample Name	Date	Sample Type	Notes
S1 - 12/17/08	12/17	10.15	
S2 -	10.16		
S3 -	10.16		
S4 -	10.16		
S5 -	10.16		

Spec. of Reference  
please sample with  
the sample 12/17/08



# Chain of Custody Record

2930 Westlake Ave. N. Suite 100  
Seattle, WA 98108

Tel: 206-352-3790

Fax: 206-352-7178

Date: 12/17/08

Page: 1 of 1

Client: ECHS  
Address: P.O. Box 153  
City, State, Zip: Fox Island, WA 98333  
Tel: 253-735-9270

Project Name: N. Precip - Port Ruston Concrete SP  
Location: S.D.S. Ruston way  
Collected by: K. Allegretti

Reports To (PM): K. Allegretti, IS. Spencer Fax: 253-369-4228 Email: kallagret@washingtongroup.com Project No:

Sample Name	Date	Sample Type	Container Type	Date of Collection	VOCs 8260	VOCs 80216 01EX	NWTH-0X	NWTH-01	NWTH-0X 02	SEMI-VOL 8210C	PACH 8270	PEHS 8082	CI PESTICIDES 8081	CI HERBICIDES 8151A	METALS	NATURAL METALS	METALS: REHA-8	Comments/Depth
1 S1-12/17/08	10:15		4/07	12/17/08				X								X		Crushed concrete
2 S2-	10:20																	
3 S3-	10:25																	
4 S4-	10:30																	
5 S5-	10:35																	
6																		
7																		
8																		
9																		
10																		

Relinquished: K. Allegretti Date/Time: 12/17/08 12:00  
Received: [Signature] Date/Time: 12/17/08 12:00

Sample Receipt:  
Good? Y  
Temperature: 15C  
Seals Intact? Y  
Total Number of Containers: 4

Special Remarks:  
Please composite into one sample S1-12/17/08  
TAT: 24HR 48HR Standard



# Fremont

Analytical

2930 Westlake Ave N Suite 100  
Seattle, WA 98109  
T: (206) 352-3790  
F: (206) 352-7178  
info@fremontanalytical.com

Environmental Management Services, LLC  
Attn: Steve Spencer  
PO Box 153  
652 8th Ave.  
Fox Island, WA 98333

RE: Point Ruston Sampling  
Fremont Project No: CHM081219-2

December 22nd, 2008

Steve:

Enclosed are the analytical results for the **Point Ruston** samples delivered to Fremont Analytical on December 19th, 2008.

The samples were received in good condition - properly sealed, labeled and within holding time. The samples were contained in 4oz soil jars. The samples were composited, extracted, analyzed and then stored in a refrigeration unit at the USEPA-recommended temperature of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

Examination of these samples was conducted for the presence of the following:

- **Total Metals (As) in Solids by EPA Method 6020**

This application was performed under Washington State Department of Ecology accreditation parameters. All appropriate Quality Assurance / Quality Control method parameters have been applied.

**Notations - EPA Method 6020:** Only 3 of the 4 samples were used to create the composite sample. Sample S2A-121908 was not included as we were not able to break down the sample to create an equal part. In addition, we were not able to include a Matrix Spike (MS) or MS Duplicate as there was not enough of a uniform sample. The Laboratory Control Sample (LCS) was included to demonstrate that the analysis was in control.

Please contact the laboratory if you should have any questions about the report.

Thank you for using Fremont Analytical!

Sincerely,

Michael Dee  
Sr. Chemist / Principal

mikedee@fremontanalytical.com

[www.fremontanalytical.com](http://www.fremontanalytical.com)



**Fremont**  
Analytical

2930 Westlake Ave . N., Suite 100  
Seattle, WA 98109

T: 206.352.3790

F: 206-352-7178

email: info@fremontanalytical.com

## **Analysis of Total Metals in Solids by EPA Method 6020**

**Project: Point Ruston Sampling**

**Client: EMS**

**Client Project #: N/A**

**Lab Project #: CHM081219-2**

EPA 6020 (mg/kg)	MRL	Method Blank	LCS	RL	Composite			Duplicate Composite	RPD
					S2-121908	S2B-121908	S2C-121908		
Date Extracted		12/22/08	12/22/08			12/22/08		12/22/08	%
Date Analyzed		12/22/08	12/22/08			12/22/08		12/22/08	
Matrix						Solid		Solid	
Arsenic (As)	1.0	nd	103%	3.0		50		47	6%

"nd" Indicates no detection at the listed reporting limits

"int" Indicates that interference prevents determination

"J" Indicates estimated value

"MRL" Indicates Method Reporting Limit

"RL" Indicates Reporting Limit

"LCS" Indicates Laboratory Co

"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%

Acceptable Recovery Limits:

LCS, LCSD, MS, MSD: 65% to 135%

Spike Concentration:

As = 60 mg/kg



# Fremont

2930 Westlake Ave. N. Suite 100 Tel: 206-352-3790  
Seattle, WA 98103 Fax: 206-352-7178

## Chain of Custody Record

Laboratory Project No (Internal): CHM081219-2

Date: 12/19/08

Page: 1 of: 1

Client: EMS  
Address: 119A Broadway Suite 230  
City, State, Zip: TACOMA WA  
Tel: 252-238-9220

Project Name: POINT BUSTON SAMPLING  
Location: 3005 BUSTON WAY TACOMA WA  
Collected by: RODIN HAMLET

Reports To (PM): RODIN HAMLET Fax: \_\_\_\_\_ Email: RHAMLET@EMSGROUPLLC.COM Project No: \_\_\_\_\_

Sample Name	Time	Sample Type (Matrix)	Container Type	Date of Collection	VOA 8260	VOA 8218 BTEX	NWTPH-GA	NWTPH-ACID	NWTPH-EXT	SEMI VOL 8170	PAH 8280	PCBS 8082	CI PESTICIDES 2081	CI HERBICIDES 8151A	Metals - 95	Total ET - Dissolved LOI	Anions (IC)**	Comments/Depth
1 52-121908		SOIL	402	12/19/08											X			
2 52A-121908															X			
3 52B-121908															X			
4 52C-121908															X			SAVE SOME OF THE FINES IN SAMPLE SAC FOR FURTHER SAMPLING IN NEEDED
5																		
6																		
7																		(X) COMPOSITE 1-4
8																		
9																		
10																		

\*Metals Analysis (Circle): MTCA-5 BCRA-6 Priority Pollutants TAT

\*\*Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate/Nitrite

Relinquished	Date/Time	Received	Date/Time	Sample Receipt:	Special Remarks
<u>Rodin Hamlet</u>	<u>12/19/08 505</u>	<u>[Signature]</u>	<u>12/19/08 1705</u>	Good?	
Relinquished	Date/Time	Received	Date/Time	Temperature:	
				Seals Intact?	
				Total Number of Containers:	(4)
				TAT →	24HR 48HR Standard





# Fremont

Analytical

2930 Westlake Ave N Suite 100  
Seattle, WA 98109  
T: (206) 352-3790  
F: (206) 352-7178  
info@fremontanalytical.com

Environmental Management Services, LLC  
Attn: Steve Spencer  
PO Box 153  
652 8th Ave.  
Fox Island, WA 98333

RE: Point Ruston  
Fremont Project No: CHM081229-2

December 30th, 2008

Steve:

Enclosed are the analytical results for the **Point Ruston** samples delivered to Fremont Analytical on December 29th, 2008.

The samples were received in good condition - properly sealed, labeled and within holding time. The samples were contained in 4oz sample jars. The samples were extracted, analyzed and then stored in a refrigeration unit at the USEPA-recommended temperature of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

Examination of these samples was conducted for the presence of the following:

- **Total Metals (As) in Solids by EPA Method 6020**

This application was performed under Washington State Department of Ecology accreditation parameters. All appropriate Quality Assurance / Quality Control method parameters have been applied.

Please contact the laboratory if you should have any questions about the report.

Thank you for using Fremont Analytical!

Sincerely,

Michelle Clements  
Lab Manager / Sr. Chemist

mclements@fremontanalytical.com

[www.fremontanalytical.com](http://www.fremontanalytical.com)



# Fremont

Analytical

2930 Westlake Ave. N., Suite 100  
Seattle, WA 98109

T: 206.352.3790

F: 206-352-7178

email: [info@fremontanalytical.com](mailto:info@fremontanalytical.com)

## Analysis of Total Metals in Solids by EPA Method 6020

Project: Point Ruston

Client: EMS

Client Project #: N/A

Lab Project #: CHM081229-2

EPA 6020 (mg/kg)	MRL	Method Blank	LCS	Duplicate		RPD	S6-122308
				S5-122308	S5-122308		
Date Extracted		12/30/08	12/30/08	12/30/08	12/30/08	%	12/30/08
Date Analyzed		12/30/08	12/30/08	12/30/08	12/30/08		12/30/08
Matrix				Concrete	Concrete		Concrete
Arsenic (As)	1.0	nd	105%	55	46	18%	5.9

"nd" Indicates no detection at the listed reporting limits

"int" Indicates that interference prevents determination

"J" Indicates estimated value

"MRL" Indicates Method Reporting Limit

"LCS" Indicates Laboratory Control Sample

"MS" Indicates Matrix Spike

"MSD" Indicates Matrix Spike Duplicate

"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%

Acceptable Recovery Limits:

LCS, LCSD, MS, MSD: 65% to 135%

Spike Concentration:

As = 60 mg/kg



# Fremont

Analytical

2930 Westlake Ave. N., Suite 100  
Seattle, WA 98109

T: 206.352.3790

F: 206-352-7178

email: [info@fremontanalytical.com](mailto:info@fremontanalytical.com)

## Analysis of Total Metals in Solids by EPA Method 6020

Project: Point Ruston

Client: EMS

Client Project #: N/A

Lab Project #: CHM081229-2

EPA 6020 (mg/kg)	MRL	C1-POST	C2-PRE	MS	MSD	RPD
				S5-122308	S5-122308	
Date Extracted		12/30/08	12/30/08	12/30/08	12/30/08	%
Date Analyzed		12/30/08	12/30/08	12/30/08	12/30/08	
Matrix		Concrete	Concrete	Concrete	Concrete	
Arsenic (As)	1.0	20	43	104%	82%	24%

"nd" Indicates no detection at the listed reporting limits

"int" Indicates that interference prevents determination

"J" Indicates estimated value

"MRL" Indicates Method Reporting Limit

"LCS" Indicates Laboratory Control Sample

"MS" Indicates Matrix Spike

"MSD" Indicates Matrix Spike Duplicate

"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%

Acceptable Recovery Limits:

LCS, LCSD, MS, MSD: 65% to 135%

Spike Concentration:

As = 60 mg/kg



# Fremont

2930 Westlake Ave. N. Suite 100 Tel: 206-452-3790  
Seattle, WA 98103 Fax: 206-452-7178

## Chain of Custody Record

Laboratory Project No (internal): CHM081229-2

Date: 12/29/08

Page 1 of 1

Client:

EMS

Project Name:

PL. Rm 41n

Address:

PO BOX 153

Location:

City, State, Zip

Tel: 2539217059

Collected by:

SMS

Reports To (PM):

Fax:

Email:

Project No:

Sample Name	Time	Sample Type (Matrix)	Container Type	Date of Collection	VOA 8260	VOA 8210 B1E4	INWTPHGA	INWTPH400	INWTPH400	INWTPH400	PAH 8270	PCB 8080	CI PESTICIDES 8081	LI PESTICIDES 8081	Metals	Asbestos (AC)	Asbestos (AC)	Comments/Notes
1. SS-122308		Concrete	402	12/23														12/23
2. SG-122308																		
3. C1- <del>POST</del>																		
4. C2- <del>PRE</del>																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		

\*Metals Analysis (Circle): MICAS PCHAB Priority Pollutants IAT

\*\*Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide 10 Phosphate Fluoride Nitrate + Nitrite

Received	Date/Time	Received	Date/Time	Sample Receipt	Special Remarks
	12/24/08		12/29/08	Good?	
Received	Date/Time	Received	Date/Time	Temperature	
			3:12 PM	Seals Intact?	
				Total Number of Containers	4

Distribution: White - Lab, Yellow - File, Pink - Originator

www.fremontanalytical.com

Dec 29 2008 12:44 PM FREMONT ANALYTICAL INC. 2008 DEC 29 12:44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Morrow, M.S.  
Yelena Aravkina, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

January 7, 2009

Steve Spencer, Project Manager  
Environmental Management Services, LLC  
PO Box 153  
Fox Island, WA 98333

Dear Mr. Spencer:

Included are the results from the testing of material submitted on January 5, 2009 from the Point Ruston, F&BI 901010 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
EMS0107R.DOC

FRIEDMAN & BRUYA, INC.

---

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 5, 2008 by Friedman & Bruya, Inc. from the Environmental Management Services Point Ruston, F&BI 901010 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

901010-01

901010-02

Environmental Management Services

D-C1-Post

D-C2-Pre

The samples were sent to NVL for arsenic analysis by atomic absorption. The report generated by NVL will be forwarded to your office upon receipt.

All quality control requirements were acceptable.

DRAFT

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	D-C1-Post	Client:	Environmental Management Services
Date Received:	01/05/09	Project:	Point Ruston, F&BI 901010
Date Extracted:	01/05/09	Lab ID:	901010-01
Date Analyzed:	01/05/09	Data File:	901010-01.010
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	103	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	40.1

DRAFT

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	D-C2-Pre	Client:	Environmental Management Services
Date Received:	01/05/09	Project:	Point Ruston, F&BI 901010
Date Extracted:	01/05/09	Lab ID:	901010-02
Date Analyzed:	01/05/09	Data File:	901010-02.011
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	99	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	12.5

DRAFT



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Environmental Management Services
Date Received:	Not Applicable	Project:	Point Ruston, F&BI 901010
Date Extracted:	01/05/09	Lab ID:	I9-002 mb
Date Analyzed:	01/05/09	Data File:	I9-002 mb.008
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	102	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1

DRAFT

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/07/09

Date Received: 01/05/09

Project: Point Ruston, F&BI 901010

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 901007-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Arsenic	mg/kg (ppm)	28.7	36.9	25 hr	0-20

Laboratory Code: 901007-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	28.7	167 b	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	102	70-130

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - The sample was extracted outside of holding time. Results should be considered estimates.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

901010

## SAMPLE CHAIN OF CUSTODY

Send Report To

Company: EMS

Address: PO Box 153

City, State, ZIP: Fox Island, WA 98333

Phone #: 253-238-9270 E-Mail: spencer@emsgroupllc.com

SAMPLERS (signature)

PROJECT NAME/NO.

Point Ruston

PO #

REMARKS

ASAP RUSH ANALYSIS

Page # 1 of 1

TURNAROUND TIME

☐ Standard 12 Weeks☒ RUSH ASAP 4 HR

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days☐ Return samples☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED										Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	ARSENIC	As by Flame AA			
D-C1-POST	-01	12/29		GRAB Composite	1							X	✓			Concrete
D-C2-PRE	-02	12/29		"	1							X	✓			Concrete
																← press
																1/5/09 ME

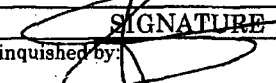

Friedman & Bruya, Inc.  
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Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	STEPHEN SPENCER	EMS	1/5	
Received by: 	Ella Sandquist	FAB7	1/5	9:41
Relinquished by:				
Received by:				